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## THE RELATION OF THE NURSE TO PULMONARY TUBERCULOSIS

By M. P.

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It is very evident that this healing process requires a long time. This wall that the body builds around the invader is at first so thin and delicate as to be scarcely stronger than a film of mucous, but even that, if it is not broken, may be sufficient to retain the germs; and now will be seen the importance of absolute rest. A sudden exertion, even rapid breathing, may stretch and break this fragile wall and release the bacilli to form new spots of disease in uninfected portions of the lungs. This often occurs, and then the walling off process must begin all over again. The tuberculous lesions are often located near blood vessels, which in the progress of the disease may become involved; a slight exertion, a sudden deep breath, may rupture the weakened wall of the vein and cause a serious hemorrhage. It will be readily seen why rapid or deep breathing as a result of exercise is dangerous before these walls of resistance which are called scar tissues have grown firm and strong.

Even light exercise, such as walking, normally increases the number of heart beats up to twenty a minute, and the respirations three or four a minute; this of course, causes the blood to flow faster and the result in tuberculosis is that more poison than the body can take care of is flushed out of the diseased area, causing a rise of temperature and increased sputum.

Every motion normally causes cell destruction that the body must repair, and the less repairing of normal tissue destruction there is to do, the more energy and body substance can be used in the healing process. A new patient invariably believes that lack of exercise will mean loss of appetite and decreased function of the organs of digestion, but such naturally expected results of inactivity seem to be diminished when the rest is taken in the open air; at any rate such patients complain much less of these things than might be expected. Digestive disturbances, should they occur as a result of inactivity, are more easily overcome than the possibly dangerous results of exercise. If these facts were carefully explained to every patient, there would be less protest against the enforced rest, and better coöperation between physician, patient and nurse. I believe many nurses would find helpful a knowledge of the general routine treatment of a patient in a tuberculosis sanatorium.

Upon admittance, a general physical examination is made,

including an X-ray, blood test, etc., and the patient is put to bed and supplied with sputum cups and old cloths to protect coughs and sneezes. It is a grave offense, indeed, to fail to cover a cough. He is then instructed not to clean the teeth over the bathroom bowl—others must wash there—but over the closet, a sanitary measure that every home and institution should adopt. The danger of expectorating anywhere except into the sputum cup is impressed upon him, and the necessity of placing therein anything having come in contact with the mouth, such as dental floss, etc., that is usually deposited upon the ground. Because these measures are rigidly enforced, a person is in much less danger of contracting disease of any kind in a sanatorium than about his home or business. The beds are on rollers and the patients are kept on the porches, night and day, except for meals and treatments, when the beds are rolled inside.

Patients are weighed every two weeks and a twenty-four hour amount of sputum is weighed once a week. As the disease becomes quiescent, the laboratory examinations which are made every month show that the bacilli are decreasing; the disease is not spoken of as "arrested" until, among other things, the bacilli have been absent for three months.

The temperature is taken every four hours, and as long as it reaches 100°F. daily, the patient is kept in bed. After the fever has been absent for a week or two, and other acute symptoms have subsided accordingly, he gradually begins to sit up until finally he is up and dressed all day, and able to go to the dining room. The dining room is like any other attractive lunch room. The tables seat four to eight, and the same laughter and chatter prevail that are usual in any public restaurant.

No nourishment is given between meals, if a gain is made on three hearty meals a day, as the old-fashioned stuffing process invariably leads to digestive disturbances and loss of appetite, but plenty of milk and eggs are given with the regular meals. Very emaciated cases, or cases failing to gain, are ordered extra nourishment.

Promptly after breakfast, the patient dons warm wraps and mittens and, wrapped in blankets on his cure chair on the porch, reads, or talks to his companions until dinner time. During the rest periods, one-half hour before and after each meal, and for two hours after dinner, the patients are expected to lie quietly without reading or conversation.

The cure chair is a wooden reclining chair with an adjustable back. It is fitted with mattresses and, with blankets and robes and a hot water bottle at the feet, one can remain on the porch all

day, even in zero weather. If it is a south porch there will be few days that the hands, protected by warm gloves, may not be used for writing or games during the warmest part of the day; even knitting and fancy work are often done during the less severe weather.

Promptly after dinner the patients return to their chairs and after the two-hour rest period, reading or conversation may again be indulged in until supper time.

After supper, another hour must be spent in the chair, and the rest of the evening until bedtime may be spent indoors in any quiet occupation. Frequently, movies or concerts are given in the recreation rooms or, in warm weather, on the lawn.

At nine-thirty, warmly clad in flannel pajamas, cap, and bed shoes, they crawl into beds that are warmed with hot water cans and, strange as it may seem to the uninitiated, it is just as easy to keep warm on the porch in zero weather, as it is in the house, if proper preparations are made. But ordinary bed making methods will not work for out-door sleeping; nor is it possible to sit on the porch in cold weather in an ordinary rocking chair. Patients not "on exercise" are expected to spend from nine to ten hours on the cure chair, and from nine to ten hours in bed. The rooms are always well heated for dressing in the morning.

After a few weeks or months, as the case may demand, of the above treatment, exercise—which always means walking—is ordered, beginning with five or ten minutes a day, and increasing until one or two hours are taken twice daily. These walks are taken after the morning and afternoon rest periods.

A reasonable length of time for an incipient case to remain in the sanatorium is six months; by that time, if favorable progress has been made, it is safe to work back very gradually into normal living, but it must never be forgotten that the disease is not yet cured, it is only arrested, and that it will require many months more of careful living to effect a cure.

The sanatorium grounds are usually attractively located and well kept, and the great majority of patients are contented and happy. Besides regaining their health, many of them find time to develop forgotten talents; others pursue special studies along many lines; various handicrafts are taught in many institutions, and the discharged patient may find himself better prepared to earn a living than he was before. The walks through the woods furnish abundant material for nature study, and every effort is made to keep the patient's mind occupied. Even for those confined to their chairs there are cards, checkers, reading, or sewing. Bird study from the porch with field glasses amuses many. Dressing rooms are well

heated and there is an abundant supply of hot water. Patients are under the daily supervision of doctors and nurses, and may consult any of the medical staff at any time. Rates vary with the institution, but average from ten to sixty dollars a week, and include doctors' services and any treatments which may be necessary.

Now for the nurse's part in bringing patient and treatment together.

People will ask advice from a nurse, oftener than from a physician, and her opportunities are unlimited to impress upon those whose cases come to her attention, the importance and advantages of sanatorium treatment, for it is almost impossible for a patient without previous sanatorium residence to carry out the proper treatment in a home without the supervision of a nurse. If only a few weeks could be spent in a sanatorium, he could in that time learn the important principles of the treatment and, if necessary, could apply his knowledge to home conditions and make satisfactory arrangements to continue his cure at home, but he must have the whole hearted coöperation of family and friends. One great obstacle in such an environment of health and activity, is that the invalid, as strength and health return, is constantly tempted to overdo, and his limitations irritate him, thus fostering a discontented mental attitude detrimental to his best progress; but in the sanatorium all of his companions are sharing his inactivity and quiet amusements. At home, when he reaches the stage where he looks and feels well, he constantly dreads the remarks of people who, not understanding, think he might just as well be working a little bit.

It is true of course, that many people have recovered without even home treatment, but it is also true that in many other cases the disease has steadily progressed until the best of care was unavailing, or the ultimate recovery was delayed for many months.

The tuberculosis hospitals are full of hopeless cases that might be well to-day, had a diagnosis been made in time. Fortunately diagnosis is not in the nurse's province, it requires, often, the skill and experience of a lung specialist to interpret correctly the delicate physical signs of tuberculosis in its earliest stages and to make the diagnosis in time to save months of invalidism. The diagnosis is not difficult when there is a daily slight cough, loss of weight, and afternoon fever. Even the patient becomes suspicious then, but it is the nurse who can see the significance of a rapid pulse *without* temperature, the slight hoarseness *without* a "cold," and the occasional touch of pleurisy—pleurisy, except traumatic pleurisy, in the majority of cases is a *result* of tuberculosis—or just that "run down" feeling, things so trifling that people will not run to the doctor about them.

It is the nurse who can convince these people that one does not "run down" without a cause; that fatigue after an hour or two of one's usual duties does mean something, and she can persuade them to seek medical advice of a competent physician who will make a thorough examination. However skilled a physician may be in other lines of work, if he has not considerable experience, or special training, in diseases of the lungs, he may fail to recognize the disease in its earliest stages when the proper treatment means so much to the patient.

The nurse can also do much preventive work along educational lines. She can impress upon mothers the importance of a well balanced diet for children. A proper diet plays an important part in a child's resistance to disease. Milk should form a large part of every child's diet, and eggs, or some protein substitute should be given every day. This is a problem that is yet to be solved for many poor families, but in many homes of comfortable circumstances children are actually undernourished, not because they do not eat the proper quantity of food, but because they are permitted to follow their own inclination entirely, in their eating habits. Most children seem to prefer carbohydrate foods to the proteins or fats which are so necessary to proper growth and development, but their tastes in many cases are largely a matter of habit, and as a well balanced diet is essential to health, they should be taught to eat all kinds of foods. Many children will not taste certain things because they have heard some one express a dislike for them. Many children are permitted to go to school with only a few bites of breakfast, just because they did not happen to like what was served. A child who cannot eat should be kept at home, for his resisting powers are low. The child who is under weight is a favorite victim of the tubercle bacilli. The hours of sleep, or at least rest in bed, should be lengthened for such a child and extra nourishment insisted upon. To the children themselves the nurse can teach many habits of hygiene that will raise their resistance to the tubercle bacilli, such as correct posture, chest expansion, cleanliness, fresh air, etc. Whenever she is in a home where there are children, she can arouse their interest in health habits by games and contests. Tuberculosis can be cured and can be prevented, and education is its greatest foe, so if every nurse would use her unlimited opportunity to spread the knowledge of the cause, prevention, and cure of tuberculosis, the results would be far reaching.